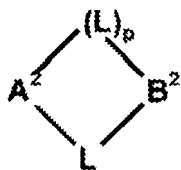


What is claimed is:

1. Congeneric, chlorinated, brominated and/or iodinated, fluorinated aromatic compounds having two benzene rings in their base structure, the fluorinated aromatic compounds having the general formula I or II:



10

where the index and the variables are each defined as follows:

15

p is 0 or 1;

A¹ is a monovalent, monofluorinated phenyl radical or monovalent, chlorinated, brominated and/or iodinated, monofluorinated phenyl radical;

20

B¹ is a monovalent, chlorinated, brominated and/or iodinated phenyl radical or monovalent, unhalogenated phenyl radical;

25

A² is a divalent, monofluorinated phenyl radical or divalent, chlorinated, brominated and/or iodinated, monofluorinated phenyl radical;

B^2 is a divalent, chlorinated, brominated and/or iodinated phenyl radical or divalent, unhalogenated phenyl radical;

5 L is an oxygen atom, sulfur atom or alkylene radical;

with the provisos that

10 (1) in the compounds I and II, the phenyl radical A^1 or A^2 is chlorinated, brominated and/or iodinated when the phenyl radical B^1 or B^2 is unhalogenated;

15 (2) in the monobrominated compounds I where $p = 0$, the phenyl radical B^1 is substituted by the bromine atom;

20 (3) in the tetrachlorinated compounds II where $p = 1$ and $L =$ oxygen atom, both phenyl radicals A^2 and B^2 are substituted by at least one chlorine atom and

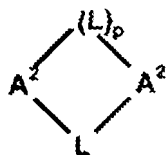
25 (4) the penta-, hexa- and hepta-halogenated compounds II where $p = 1$ and $L =$ oxygen atom are substituted by bromine and/or iodine or by chlorine and bromine and/or iodine;

or have the general formula III, IV, V, VI or VII:

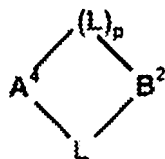
30 $[A^1-I^+-A^1]_q Y^{q-}$ (IIIa) or
 $[A^3-I^+-A^3]_q Y^{q-}$ (IIIb),

$A^1-(L)_p-A^1$ (IV),

35 $A^3-(L)_p-B^1$ (V),



(VI) or



(VII);

where the variables A^1 , B^1 , A^2 , B^2 and L and the index p are each as defined above and the variables Y , A^3 and A^4 and the index q are each defined as follows:

q is an integer from 1 to 4;

Y is an acid anion;

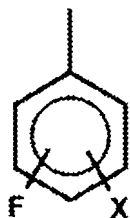
A^3 is a monovalent, difluorinated phenyl radical or monovalent, chlorinated, brominated and/or iodinated, difluorinated phenyl radical;

A^4 is a divalent, difluorinated phenyl radical or divalent, chlorinated, brominated and/or iodinated, difluorinated phenyl radical;

with the provisos that

(5) in the difluorinated compounds III, A^1 is not a monovalent, monofluorinated phenyl radical;

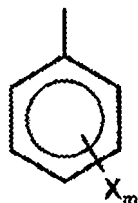
- (6) in the difluorinated compounds IV, at least one phenyl radical A^1 is chlorinated, brominated and/or iodinated;
- 5 (7) in the difluorinated compounds V, the phenyl radical A^3 is chlorinated, brominated and/or iodinated when the monovalent phenyl radical B^1 is not halogenated;
- 10 (8) in the difluorinated compounds VI, at least one phenyl radical A^2 is chlorinated, brominated and/or iodinated and
- 15 (9) in the difluorinated compounds VII, the phenyl radical A^3 is chlorinated, brominated and/or iodinated when the divalent phenyl radical B^2 is not halogenated.
2. Congeneric compounds as claimed in claim 1,
20 characterized in that the phenyl radical A^1 has the general formula XX:



(XX).

- 25 where the variable X = halogen atom selected from the group consisting of chlorine, bromine and iodine, and the index $n = 0$ or an integer from 1 to 4.

3. Congeneric compounds as claimed in claim 1 or 2, characterized in that the phenyl radical B¹ has the general formula XXI:



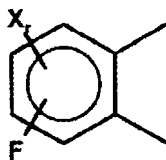
(XXI).

5

where the variable X = halogen atom selected from the group consisting of chlorine, bromine and iodine, and the index m = 0 or an integer from 1 to 5.

10

4. Congeneric compounds as claimed in one of claims 1 to 3, characterized in that the phenyl radical A² has the general formula XXII:



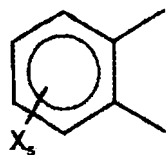
(XXII).

15

where the variable X = halogen atom selected from the group consisting of chlorine, bromine and iodine, and the index r = 0 or an integer from 1 to 3.

20

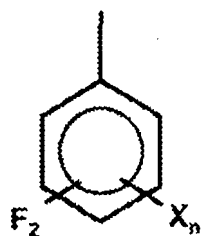
5. Congeneric compounds as claimed in one of claims 1 to 4, characterized in that the phenyl radical B² has the general formula XXII:



(XXIII),

where the variable X = halogen atom selected from the group consisting of chlorine, bromine and iodine, and the index $s = 0$ or an integer from 1 to 4.

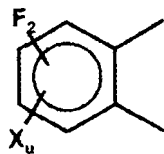
6. Congeneric compounds as claimed in one of claims 1 to 5, characterized in that the phenyl radical A^3 has the general formula XXIV:



(XXIV),

where the variable X = halogen atom selected from the group consisting of chlorine, bromine and iodine, and the index $n = 0, 1$ or 2 .

7. Congeneric compounds as claimed in one of claims 1 to 6, characterized in that the phenyl radical A^4 has the general formula XXV:



(XXV),

where the variable X = halogen atom selected from the group consisting of chlorine, bromine and iodine, and the index u = 0, 1 or 2.

8. Congeneric compounds as claimed in one of claims 1 to 7, characterized in that L = carbon-carbon single bond, oxygen atom or methylene radical.

9. Congeneric compounds as claimed in one of claims 1 to 8, characterized in that the halogen atom X is selected from the group consisting of chlorine and bromine.

10. Congeneric compounds as claimed in one of claims 1 to 9, characterized in that Y = Cl⁻ or SO₄²⁻.

11. Congeneric compounds as claimed in one of claims 1 to 10, characterized in that the phenyl radicals A¹ are selected from the group consisting of:

- 2-, 3- and 4-fluorophenyl;
- 2-fluoro-3-halo-, 2-fluoro-4-halo-, 2-fluoro-5-halo- and 2-fluoro-6-halophenyl;
- 3-fluoro-2-halo-, 3-fluoro-4-halo-, 3-fluoro-5-halo- and 3-fluoro-6-halophenyl;
- 4-fluoro-2-halo- and 4-fluoro-3-halophenyl;
- 2-fluoro-3,4-dihalo-, 2-fluoro-3,5-dihalo-, 2-fluoro-3,6-dihalo-, 2-fluoro-4,5-dihalo- and 2-fluoro-4,6-dihalophenyl;

- 3-fluoro-2,4-dihalo-, 3-fluoro-2,5-dihalo-,
3-fluoro-2,6-dihalo-, 3-fluoro-4,5-dihalo, 3-fluoro-
4,6-dihalo- and 3-fluoro-5,6-dihalophenyl;
 - 4-fluoro-2,3-dihalo-, 4-fluoro-2,5-dihalo-,
5 4-fluoro-3,5-dihalo- and 4-fluoro-2,6-dihalophenyl;
 - 2-fluoro-3,4,5-trihalo-, 2-fluoro-3,4,6-trihalo- and
2-fluoro-4,5,6-trihalophenyl;
 - 3-fluoro-2,4,5-trihalo-, 3-fluoro-2,4,6-trihalo- and
3-fluoro-4,5,6-trihalophenyl;
 - 10 - 4-fluoro-2,3,5-trihalo- and 4-fluoro-2,5,6-
trihalophenyl; and
 - 2-fluoro-3,4,5,6-tetrahalo-, 3-fluoro-2,4,5,6-
tetrahalo- and 4-fluoro-2,3,5,6-tetrahalophenyl.
- 15 12. Congeneric compounds as claimed in claim 11,
characterized in that the phenyl radical A¹ is selected
>from the group consisting of:
- 2-, 3- and 4-fluorophenyl;
 - 20 - 2-fluoro-3-chloro-, 2-fluoro-4-chloro-, 2-fluoro-5-
chloro- and 2-fluoro-6-chlorophenyl;
 - 3-fluoro-2-chloro-, 3-fluoro-4-chloro-, 3-fluoro-5-
chloro- and 3-fluoro-6-chlorophenyl;
 - 4-fluoro-2-chloro- and 4-fluoro-3-chlorophenyl;
 - 25 - 2-fluoro-3-bromo-, 2-fluoro-4-bromo-, 2-fluoro-5-
bromo- and 2-fluoro-6-bromophenyl;
 - 3-fluoro-2-bromo-, 3-fluoro-4-bromo-, 3-fluoro-5-
bromo- and 3-fluoro-6-bromophenyl;
 - 4-fluoro-2-bromo- and 4-fluoro-3-bromophenyl;
 - 30 - 2-fluoro-4-chloro-3-bromo-, 2-fluoro-3-chloro-4-
bromo-, 2-fluoro-5-chloro-3-bromo-, 2-fluoro-3-
chloro-5-bromo-, 2-fluoro-6-chloro-3-bromo-, 2-
fluoro-3-chloro-6-bromo-, 2-fluoro-5-chloro-4-bromo-
, 2-fluoro-4-chloro-5-bromo-, 2-fluoro-6-chloro-4-

- bromo-, 2-fluoro-4-chloro-6-bromo-, 2-fluoro-5-chloro-6-bromo- and 2-fluoro-6-chloro-5-bromophenyl;
- 5 - 3-fluoro-4-chloro-2-bromo-, 3-fluoro-2-chloro-4-bromo-, 3-fluoro-5-chloro-2-bromo-, 3-fluoro-2-chloro-5-bromo-, 3-fluoro-6-chloro-2-bromo-, 3-fluoro-2-chloro-6-bromo-, 3-fluoro-5-chloro-4-bromo-, 3-fluoro-4-chloro-5-bromo-, 2-fluoro-6-chloro-4-bromo-, 3-fluoro-4-chloro-6-bromo-, 3-fluoro-6-chloro-5-bromo- and 3-fluoro-5-chloro-6-bromophenyl;
- 10 - 4-fluoro-3-chloro-2-bromo-, 4-fluoro-2-chloro-3-bromo-, 4-fluoro-2-chloro-5-bromo-, 4-fluoro-5-chloro-3-bromo- and 4-fluoro-2-chloro-6-bromophenyl;
- 2-fluoro-4,5-dichloro-3-bromo-, 2-fluoro-3,5-dichloro-4-bromo-, 2-fluoro-3,4-dichloro-5-bromo-, 2-fluoro-5-chloro-3,4-dibromo-, 2-fluoro-4-chloro-3,5-dibromo-, 2-fluoro-3-chloro-4,5-dibromo-, 2-fluoro-3,4-dichloro-3-bromo-, 2-fluoro-3,6-dichloro-4-bromo-, 2-fluoro-3,4-dichloro-6-bromo-, 2-fluoro-6-chloro-3,4-dibromo-, 2-fluoro-4-chloro-3,6-dibromo-, 2-fluoro-3-chloro-4,6-dibromo-, 2-fluoro-5,6-dichloro-4-bromo-, 2-fluoro-4,6-dichloro-5-bromo-, 2-fluoro-4,5-dichloro-6-bromo-, 2-fluoro-6-chloro-4,5-dibromo-, 2-fluoro-5-chloro-4,6-dibromo- and 2-fluoro-4-chloro-5,6-dibromophenyl;
- 20 - 3-fluoro-4,5-dichloro-2-bromo-, 3-fluoro-2,5-dichloro-4-bromo-, 3-fluoro-2,4-dichloro-5-bromo-, 3-fluoro-4-chloro-2,5-dibromo-, 3-fluoro-2-chloro-4,5-dibromo-, 3-fluoro-5-chloro-2,4-dibromo-, 3-fluoro-4,6-dichloro-2-bromo-, 3-fluoro-2,6-dichloro-4-bromo-, 3-fluoro-6-chloro-2,4-dibromo-, 3-fluoro-4-chloro-2,6-dibromo-, 3-fluoro-2-chloro-4,6-dibromo-, 3-fluoro-5,6-dichloro-4-bromo-, 3-fluoro-4,6-dichloro-5-bromo-, 3-fluoro-4,5-dichloro-6-bromo-, 3-fluoro-6-chloro-4,5-dibromo-, 3-fluoro-4-
- 25
- 30

chloro-5,6-dibromo- and 3-fluoro-5-chloro-4,6-dibromophenyl;

5 - 4-fluoro-2,3-dichloro-5-bromo-, 4-fluoro-2,5-dichloro-3-bromo-, 4-fluoro-3,5-dichloro-2-bromo-, 4-fluoro-3-chloro-5,6-dibromo-, 4-fluoro-3-chloro-2,5-dibromo-, 4-fluoro-2-chloro-3,5-dibromo-, 4-fluoro-2,3-dichloro-6-bromo-, 4-fluoro-2,6-dichloro-3-bromo-, 4-fluoro-2,5-dichloro-6-bromo-, 4-fluoro-2-chloro-5,6-dibromo-, 4-fluoro-2-chloro-3,6-dibromo- and 4-fluoro-3-chloro-2,6-dibromophenyl;

10 - 2-fluoro-4,5,6-trichloro-3-bromo-, 2-fluoro-3,5,6-trichloro-4-bromo-, 2-fluoro-3,4,6-trichloro-5-bromo-, 2-fluoro-3,4,5-trichloro-6-bromo-, 2-fluoro-5,6-dichloro-3,4-dibromo-, 2-fluoro-4,6-dichloro-3,5-dibromo-, 2-fluoro-4,5-dichloro-3,6-dibromo-, 2-fluoro-3,6-dichloro-4,5-dibromo-, 2-fluoro-3,5-dichloro-4,6-dibromo-, 2-fluoro-3,4-dichloro-5,6-dibromo-, 2-fluoro-3-chloro-4,5,6-tribromo-, 2-fluoro-4-chloro-3,5,6-tribromo-, 2-fluoro-5-chloro-3,4,6-tribromo- and 2-fluoro-6-chloro-3,4,5-tribromophenyl;

20 - 3-fluoro-4,5,6-trichloro-2-bromo-, 3-fluoro-2,5,6-trichloro-4-bromo-, 3-fluoro-2,4,6-trichloro-5-bromo-, 3-fluoro-2,4,5-trichloro-6-bromo-, 3-fluoro-5,6-dichloro-2,4-dibromo-, 3-fluoro-4,6-dichloro-2,5-dibromo-, 3-fluoro-4,5-dichloro-2,6-dibromo-, 3-fluoro-2,4-dichloro-5,6-dibromo-, 3-fluoro-2,5-dichloro-4,6-dibromo-, 3-fluoro-2,6-dichloro-4,5-dibromo-, 3-fluoro-6-chloro-2,4,5-tribromo-, 3-fluoro-5-chloro-2,4,6-tribromo-, 3-fluoro-4-chloro-2,5,6-tribromo- and 3-fluoro-2-chloro-4,5,6-tribromophenyl; and

30 - 4-fluoro-2,3,5-trichloro-6-bromo-, 4-fluoro-2,3,6-trichloro-5-bromo-, 4-fluoro-2,3-dichloro-5,6-dibromo-, 4-fluoro-2,6-dichloro-3,5-dibromo-, 4-

fluoro-3,5-dichloro-2,6-dibromo-, 4-fluoro-2,5-dichloro-3,6-dibromo-, 4-fluoro-2-chloro-3,5,6-tribromo- and 4-fluoro-3-chloro-2,5,6-tribromophenyl.

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13. Congeneric compounds as claimed in one of claims 1 to 12, characterized in that the phenyl radical B¹ is selected from the group consisting of:

10

- phenyl;
- 2-, 3- and 4-halophenyl;
- 2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-dihalophenyl;
- 2,3,4-, 2,4,5-, 2,4,6- and 3,4,5-trihalophenyl;
- 2,3,4,6- and 2,3,4,5-tetrahalophenyl; and
- pentahalophenyl.

15

14. Congeneric compounds as claimed in claim 13, characterized in that the phenyl radical B¹ is selected from the group consisting of:

20

- 2-chloro-6-bromo-, 3-chloro-2-bromo-, 2-chloro-3-bromo-, 2-chloro-5-bromo-, 3-chloro-6-bromo-, 4-chloro-2-bromo- and 2-chloro-4-bromophenyl;
- 2,4-dichloro-6-bromo-, 2,6-dichloro-4-bromo-, 4-chloro-2,6-dibromo-, 2-chloro-4,6-dibromo-, 2,3-dichloro-4-bromo-, 2,4-dichloro-3-bromo-, 3,4-dichloro-2-bromo-, 4-chloro-2,3-dibromo-, 3-chloro-2,4-dibromo-, 2-chloro-3,4-dibromo-, 3,4-dichloro-5-bromo-, 3,5-dichloro-4-bromo-, 3-chloro-4,5-dibromo- and 4-chloro-3,5-dibromophenyl;
- 2,4,5-trichloro-6-bromo-, 2,4,6-trichloro-3-bromo-, 2,3,6-trichloro-4-bromo-, 2,3,4-trichloro-5-bromo- and 2,3,4-trichloro-6-bromo-, 2,4-dichloro-5,6-dibromo-, 2,5-dichloro-4,6-dibromo-, 3,4-dichloro-2,6-dibromo-, 2,6-dichloro-3,4-dibromo-, 2,4-

35

dichloro-3,6-dibromo-, 2-chloro-4,5,6-tribromo-, 3-chloro-4,5,6-tribromo-, 4-chloro-2,5,6-tribromo-, 4-chloro-3,5,6-tribromo-, 3-chloro-2,4,6-tribromo- and 2-chloro-3,4,6-tribromophenyl; and

- 5 - 2,3,4,5-tetrachloro-6-bromo-, 2,3,4,6-tetrachloro-5-bromo-, 2,3,5,6-tetrachloro-4-bromo-, 2,2,4-trichloro-5,6-dibromo-, 2,4,5-trichloro-3,6-dibromo-, 3,4,5-trichloro-2,6-dibromo-, 2,3-dichloro-4,5,6-tribromo-, 2,4-dichloro-3,5,6-tribromo-, 2,5-dichloro-3,4,6-tribromo-, 2,6-dichloro-3,4,5-tribromo-, 2-chloro-3,4,5,6-tetrabromo-, 3-chloro-2,4,5,6-tetrabromo- and 4-chloro-2,3,5,6-tetrabromophenyl.
- 10

- 15 15. Congeneric compounds as claimed in one of claims 1 to 14, characterized in that the phenyl radical A² is selected from the group consisting of

- 20 - 3-fluorophen-1,2-ylene;
 - 3-fluoro-4-chloro- and -4-bromophen-1,2-ylene;
 - 3-fluoro-4,5-dichloro-, -4,5-dibromo-, -4-chloro-5-bromo- and -4-bromo-5-chlorophen-1,2-ylene;
 - 3-fluoro-4,5,6-trichloro-, -4,5,6-tribromo-, -4-chloro-5,6-dibromo-, -5-chloro-4,6-dibromo-, -4-bromo-5,6-dichloro- and -5-bromo-4,6-dichlorophen-1,2-ylene;
25 - 4-fluorophen-1,2-ylene;
 - 4-fluoro-3-chloro- and -3-bromophen-1,2-ylene;
 - 4-fluoro-5-chloro- and -5-bromophen-1,2-ylene;
30 - 4-fluoro-6-chloro- and -6-bromophen-1,2-ylene;
 - 4-fluoro-3,5-dichloro-, -3,5-dibromo-, -3-chloro-5-bromo- and -3-bromo-5-chlorophen-1,2-ylene;
 - 4-fluoro-3,6-dichloro-, -3,6-dibromo-, -3-chloro-6-bromo- and -3-bromo-6-chlorophen-1,2-ylene;

- 4-fluoro-5,6-dichloro-, -5,6-dibromo-, -5-chloro-6-bromo- and -5-bromo-6-chlorophen-1,2-ylene; and
- 4-fluoro-3,5,6-trichloro-, -3,5,6-tribromo-, -3-chloro-5,6-tribromo-, -3-bromo-5,6-dichloro-, -5-chloro-3,6-dibromo-, -5-bromo-3,6-dichloro-, -6-chloro-3,6-dibromo- and -6-bromo-3,6-dichlorophen-1,2-ylene.

16. Congeneric compounds as claimed in one of claims 1 to 15, characterized in that the phenyl radical B² is selected from the group consisting of

- phen-1,2-ylene;
- 3-chloro- and 3-bromophen-1,2-ylene;
- 4-chloro- and 4-bromophen-1,2-ylene;
- 3,4-dichloro-, 3,4-dibromo-, 3-chloro-4-bromo- and 3-bromo-4-chlorophen-1,2-ylene;
- 3,5-dichloro-, 3,5-dibromo-, 3-chloro-5-bromo- and 3-bromo-5-chlorophen-1,2-ylene;
- 4,5-dichloro-, 4,5-dibromo- and 4-chloro-5-bromophen-1,2-ylene;
- 3,4,5-trichloro-, 3,4,5-tribromo-, 3-chloro-4,5-dibromo-, 3-bromo-4,5-dichloro-, 4-chloro-3,5-dibromo- and 4-bromo-3,5-dichlorophen-1,2-ylene;
- 3,4,6-trichloro-, 3,4,6-tribromo-, 3-chloro-4,6-dibromo-, 4-chloro-3,6-dibromo- and 4-bromo-3,6-dichlorophen-1,2-ylene; and
- 3,4,5,6-tetrachloro-, 3,4,5,6-tetrabromo-, 3-chloro-4,5,6-tribromo-, 3-bromo-4,5,6-trichloro-, 3,4-dichloro-5,6-dibromo-, 3,5-dichloro-4,6-dibromo-, 4,5-dichloro-3,6-dibromo- and 4,5-dibromo-3,6-dichlorophen-1,2-ylene.

17. Congeneric compounds as claimed in one of claims 1 to 17, characterized in that the phenyl radical A³ is

selected from the group consisting of 2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-difluorophenyl radicals and chlorinated and/or brominated 2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-difluorophenyl radicals.

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18. Congeneric compounds as claimed in one of claims 1 to 18, characterized in that the phenyl radical A⁴ is selected from the group consisting of 3,4-, 3,5-, 3,6- and 4,5-difluorophen-1,2-ylene radicals and chlorinated and/or brominated 3,4-, 3,5-, 3,6- and 4,5-difluorophen-1,2-ylene radicals.

10

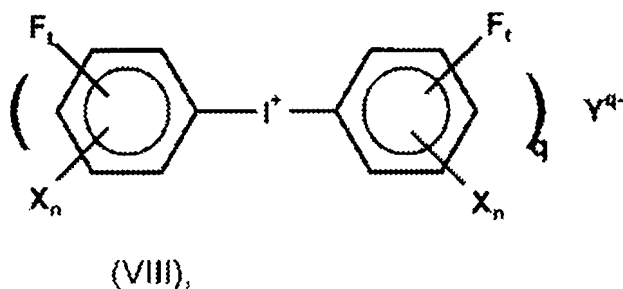
19. Congeneric compounds as claimed in one of claims 1 to 18, characterized in that they are selected from the group consisting of:

15

- 4'-fluoro-2,3',4-tribromodiphenyl ether,
- 4'-fluoro-2,3',6-tribromodiphenyl ether,
- 4'-fluoro-2,3',4,6-tetrabromodiphenyl ether,
- 20 - 4'-fluoro-2,3,3',4,5,6-hexabromodiphenyl ether,
- 3'-fluoro-2,4,4'-trichlorobiphenyl and
- 4-methyl-2,2',5,6-tetrachloro-3'-fluorodiphenylmethane,
- 1-fluoro-2,3,7,8-tetrachlorodibenzo-p-dioxin,
- 25 - 2-fluoro-1,4,6,9-tetrachlorodibenzo-p-dioxin,
- 4-fluoro-1,3,6,7,8,9-hexachlorodibenzofuran,
- 3,3'-dibromo-4,4'-difluorodiphenyliodonium chloride,
- 4,4'-dichloro-3,3',5,5'-tetrafluorodiphenyliodonium chloride,
- 30 - 2',3,3',4,5,5',6,6'-octabromo-2,4'-difluorodiphenyl ether,
- 4-methyl-2,2',5,6-tetrachloro-3,3'-difluoro-diphenylmethane,
- 1,2,3,7,8,9-hexachloro-4,6-difluorodibenzofuran and
- 35 - 1,2,3,7,8,9-hexachloro-4,6-difluorodibenzo-p-dioxin.

20. A process for preparing congeneric, chlorinated, brominated and/or iodinated fluorinated aromatic compounds I, IV or V having two benzene rings in their base structure as claimed in one of claims 1 to 19, characterized in that

(1) a symmetrical difluorinated or tetrafluorinated iodonium salt of the general formula (VIII):



where the index and the variables are each defined as follows:

t is 1 or 2,

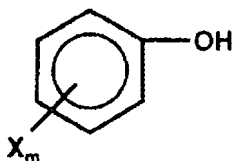
n is 0 or an integer from 1 to 4,

q is an integer from 1 to 4,

X is chlorine, bromine and/or iodine and

Y is an acid anion;

is reacted with a chlorinated, brominated and/or iodinated phenol of the general formula (IX):



(IX),

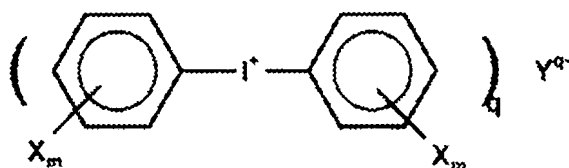
where the index $m = 0$ or an integer from 1 to 5
and the variable X is as defined above;

5

with the provisos that $m =$ an integer from 1 to 5
when $n = 0$; or, alternatively,

10

(2) a symmetrical unfluorinated diphenyliodonium salt
of the general formula (X):

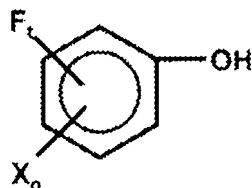


(X),

15

where the variables X and Y and the indices m and
 q are each as defined above;

is reacted with a monofluorinated or difluorinated
phenol of the general formula (XI):



(XI),

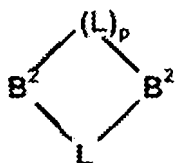
20

where the index n and the variable X are each as defined above and the index t = 1 or 2;

5 with the provisos that m = an integer from 1 to 5 when n = 0, and n = an integer from 1 to 4 when m = 0.

21. A process for preparing congeneric, chlorinated, brominated and/or iodinated, fluorinated aromatic
10 compounds of the general formula I, II or IV to VII having two benzene rings in their base structure as claimed in one of claims 1 to 19, characterized in that

15 (1) a chlorinated, brominated and/or iodinated aromatic compound having two benzene rings in its base structure of the general formula XII or XIII:

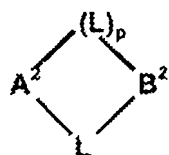


(XIII);

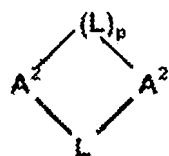
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where the variables B^1 , B^2 and L and the index p are each as defined above, with the proviso that at least one of the phenyl radicals B^1 or B^2 is
25 chlorinated, brominated and/or iodinated; is monofluorinated or difluorinated, or, alternatively,

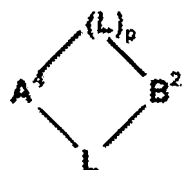
30 (2) a monofluorinated or difluorinated, aromatic compound having two benzene rings in its base structure of the general formulae XIV to XIX:



(XVII),



(XVIII) or



(XIX);

where the indices and the variables are each as defined above, with the proviso that the phenyl radicals A^1 to A^4 and B^1 and B^2 are not chlorinated, brominated or iodinated,

is chlorinated, brominated and/or iodinated, or, alternatively,

- (3) a chlorinated, brominated and/or iodinated benzene derivative is reacted with a brominated and/or iodinated, monofluorinated or difluorinated

benzene or alkylbenzene or a brominated and/or iodinated, chlorinated, monofluorinated or difluorinated benzene or alkylbenzene, or, alternatively,

5

(4) a chlorinated, brominated and/or iodinated, monofluorinated or difluorinated benzene derivative is reacted with a brominated and/or iodinated benzene or alkylbenzene or a brominated and/or iodinated, chlorinated benzene or alkylbenzene.

10

22. The process as claimed in claim 21, characterized in that the benzene derivative is a benzene boric acid.

15

23. A process for preparing congeneric, chlorinated, brominated and/or iodinated, difluorinated or tetrafluorinated diphenyliodonium salts of the general formula III as claimed in one of claims 1 to 19, characterized in that a chlorinated, brominated and/or iodinated, monofluorinated or difluorinated benzene is reacted with iodyl sulfate.

20

24. The use of the congeneric, chlorinated, brominated and/or iodinated monofluorinated compounds of the general formula I, II or IV to VII as claimed in one of claims 1 to 19 and of the congeneric, chlorinated, brominated and/or iodinated, monofluorinated compounds of the general I, II or IV to VII prepared by a process as claimed in one of claims 20 to 22 in the analysis of organic compounds.

25

30

25. The use as claimed in claim 24, characterized in that the congeneric, chlorinated, brominated and/or iodinated, monofluorinated compounds of the general

35

formula I, II or IV to VII are used in the analysis of halogenated organic compounds.

26. The use as claimed in claim 25, characterized in that
5 the compounds of the general formula I, II or IV to VII are used

- as internal standards or surrogate standards which,
together with their parent compounds, pass through
10 physical, chemical and/or biological processes and
are then detected and/or analyzed together with them
or separately from them,

- as external standards which, in place of their
15 parent compounds, pass through physical, chemical
and/or biological processes for the purposes of
calibrating these processes and are analyzed and/or
detected separately from the parent compounds,
and/or

20 - as model compounds which, in place of their parent
compounds, pass through chemical and/or biological
processes for the purposes of elucidating the
reaction mechanisms and whose reaction products are
25 detected and/or analyzed.

27. The use as claimed in claim 26, characterized in that
the parent compounds are congeneric, chlorinated,
brominated and/or iodinated diphenyl ethers, biphenyls,
30 diphenylmethanes, dibenzo-p-dioxins and dibenzofurans.